ABSTRACT

An apparatus for testing power transmission components of a locked gear train having two helical gears coupled on a first shaft meshed with two helical pinions coupled on a second shaft, with the two gears arranged to axially translate (while rotating) with respect to the two pinions when a linear force is applied to a thrust bearing at an end of the first shaft. The axial displacement of the two gears causes torsional displacements of the meshed gear and shaft elements, creating a dynamic torque within the locked train assembly. Under rotation, this dynamic torque subjects the components within the locked gear train to a much higher power level for testing.